

<p>FORM PTO-1449</p> <p>U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p>(Use several sheets if necessary)</p>	<p>ATTY. DOCKET NO. I-1-0065.10US</p>	<p>SERIAL NO. 10/663,240</p>
	<p>APPLICANT Bolgiano et al.</p>	
	<p>FILING DATE September 16, 2003</p>	<p>GROUP 2475</p>

U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		3,714,573	01/1973	Grossman			
		4,081,748	03/1978	Batz			
		4,099,121	07/1978	Fang			
		4,128,809	12/1978	Kage			
		4,426,712	01/1984	Gorski-Popiel			
		4,530,087	07/1985	Yamamoto			
		4,589,734	07/1986	Yamamoto			
		4,644,351	02/1987	Zabarsky			
		4,675,863	06/1987	Paneth et al.			
		4,679,147	07/1987	Tsuji et al.			
		4,727,590	02/1988	Kawano et al.			
		4,780,885	10/1988	Paul et al.			
		4,799,252	01/1989	Eizenhoffer et al.			
		4,901,307	02/1990	Gilhousen et al.			
		4,954,958	09/1990	Savage et al.			
		5,031,193	07/1991	Atkinson et al.			
		5,043,736	08/1991	Darnell et al.			
		5,046,066	09/1991	Messenger			
		5,056,106	10/1991	Wang et al.			
		5,058,200	10/1991	Huang et al.			
		5,068,916	11/1991	Harrison et al.			
		5,081,641	01/1992	Kotzin et al.			
		5,081,643	01/1992	Schilling			
		5,088,108	02/1992	Uddenfeldt et al.			
		5,097,484	03/1992	Akaiwa			

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	5,101,501	03/1992	Gilhausen et al.			
	5,103,459	04/1992	Gilhausen et al.			
	5,109,390	04/1992	Gilhausen et al.			
	5,124,915	06/1992	Krenzel			
	5,128,925	07/1992	Dornstetter et al. <sup>13</sup>			
	5,155,689	10/1992	Wortham			
	5,164,942	11/1992	Kamerman et al.			
	5,166,961	11/1992	Schilling			
	5,177,765	1/5/1993	Holland et al.			
	5,193,101	09/1993	McDonald et al.			
	5,203,018	04/1993	Hirose			
	5,208,756	05/1993	Song			
	5,214,789	05/1993	George			
	5,218,367	06/1993	Sheffer et al.			
	5,218,618	06/1993	Sagey			
	5,223,844	06/1993	Marsell et al.			
	5,227,802	07/1993	Pullman			
	5,235,633	08/1993	Nass et al.			
	5,247,356	09/1993	Ciampa			
	5,260,943	11/1993	Comroe et al.			
	5,260,967	11/1993	Schilling			
	5,280,472	01/1994	Gilhausen et al.			
	5,283,767	02/1994	McCoy			
	5,289,499	02/1994	Weerackody			
	5,289,527	02/1994	Tiedemann, Jr.			
	5,293,645	03/1994	Sood et al. <sup>1</sup>			

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	5,297,162	03/1994	Lee et al.			
	5,305,353	04/1994	Weerackody			
	5,321,696	04/1994	Buchholz et al.			
	5,323,384	06/1994	Norwood			
	5,329,530	07/1994	Kojima			
	5,345,467	09/1994	Lomp et al.			
	5,347,535	09/1994	Karasawa et al.			
	5,365,316	11/1994	Jandrell <sup>11</sup>			
	5,367,539	11/1994	Copley			
	5,371,734	12/1994	Fischer			
	5,371,780	12/1994	Amitay			
	5,373,502	12/1994	Turban			
	5,390,166	02/1995	Rohani et al.			
	5,420,883	05/1995	Swensen et al.			
	5,430,769	07/1995	Patsiokas et al.			
	5,442,625	08/1995	Orlin et al.			
	5,479,448	12/1995	Seshadri			
	5,481,533	1/1996	Honig et al.			
	5,483,244	01/1996	Grube et al.			
	5,483,668	01/1996	Malkamaki et al.			
	5,506,863	4/9/1996	Meidan et al.			
	5,513,176	04/1996	Dean et al.			
	5,533,011	07/1996	Dean et al.			
	5,533,013	07/1996	Leppanen			
	5,553,076	9/3/1996	Behtash et al.			
	5,584,057	12/1996	Dent			

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	5,594,737	01/1997	Pillekamp et al. <sup>7</sup>			
	5,614,914	03/1997	Bolgiano et al.			
	5,625,876	04/1997	Gilhausen et al.			
	5,663,990	09/1997	Bolgiano et al.			
	5,684,793	11/1997	Kiema et al.			
	5,712,868	01/1998	Stern et al. <sup>12</sup>			
	5,748,669	05/1998	Yada			
	5,761,196	6/2/1998	Ayerst et al.			
	5,781,541	07/1998	Schnieder			
	5,859,879	01/1999	Bolgiano et al.			
	5,881,094	03/1999	Schilling			
	5,912,644	06/1999	Wang			
	6,175,308	01/2001	Tallman et al.			
	6,747,969	06/2007	Hirsch			
	*	7,379,518	Dick et al.			

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
	0459823	04/1991	EP				
	0528090	02/1993	EP				
	2237708	05/1991	GB				
	2259430	05/1993	GB				
	05-276210	10/1993	JP			X**	
	06-244814	09/1994	JP			X**	
	1-233930	09/1989	JP			X**	
	63-237636	10/1998	JP			X	

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
		H01-314443	12/1989	JP			X**	
		H02-3007	01/1990	JP			X	
		H02-302133	06/1992	JP			X	
		H03-177669	08/1991	JP			X	
		H03-235077	10/1991	JP				
		H05-244051	09/1993	JP			X**	
		H06-097914	04/1994	JP			X**	
		S53-109368	08/1978	JP			X	
		S63-065723	09/1989	JP			X	
		S63-274236	11/1988	JP			X**	
		S63-286027	11/1988	JP			X	
		S63-286072	11/1988	JP			X**	
		H05-211470	08/1993	JP <sup>2</sup>			X**	
		H04-502844	08/1993	JP <sup>3</sup>			X	
		H06-501349	01/1992	JP <sup>5</sup>			X	
		H03-094851	09/1991	JP				X
		05-102943	04/1993	JP			X**	
		05-227124	09/1993	JP			X**	
		199107036	05/1991	WO <sup>4</sup>				
		199200639	01/1992	WO <sup>6</sup>				
		199210890	06/1992	WO				
		199306669	04/1993	WO				
		199608908	03/1996	WO <sup>8</sup>				
		199833346	07/1998	WO <sup>9</sup>				
		199939455	08/1999	WO <sup>10</sup>				

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OTHER DOCUMENTS		
EXAMINER INITIAL		DESCRIPTION (Including Author, Title, Date, Pertinent Pages, Etc.)
		"Mobile Station-Base Station Compatibility Standard for Dual-Mode Wideband Spread Spectrum Cellular System", TIA/EIA/IS-95-A, TIA Interim Standard, (May 1995).
		"Ultraphone, System Description GP110," InterDigital Communications Corporation, pgs. 1-17, (October 1993).
		"Ultraphone, System Technical Specification GP130, Interdigital Communications Corporation, pgs. 1-12, (January 1994).
		AZAD ET AL., "Multirate Spread Spectrum Direct Sequence CDMA Techniques", The Institution of Electrical Engineers, pp. 4/1-4/5 (1994).
		BARAN, "On Distributed Communications Networks," IEEE Transactions on Communication Systems, Volume 12 (March 1964).
		BARAN, "On Distributed Communications Networks," RAND Corporation Paper, P-2626 (September 1962).
		BLANZ ET AL., "Performance of a Cellular Hybrid CDMA Mobile Radio System Applying Detection and Coherent Receiver Antenna Diversity," IEEE, pgs. 568-579, (May 1994).
		ERCEG ET AL., "Urban/Suburban Out-of-Sight Propagation Modeling," IEEE Communications Magazine, pgs. 56-61, (June 1992).
		ESMAILZADEH ET AL., "Direct Sequence Spread Spectrum Communication in Selection Diversity Channels by Time Division Duplex Technique," IEEE, pgs. 345-348, (1992).
		ESMAILZADEH ET AL., "Quasi-Synchronous Time Division Duplex CDMA", IEEE, pgs. 1632-1641, (1994).
		ESMAILZADEH ET AL., "Time Division Duplex Transmission of Direct Sequence Spread Spectrum Signals in Multipath Channels", IEEE, pgs. 1572-1576, (1994).

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	GERLACH ET AL., "Base Station Transmitter Antenna Arrays With Mobile to Base Feedback", IEEE 1993 Conference Record of the Twenty-Seventh Asilomar Conference on Signals, Systems, and Computers, Vol. 2, pgs. 1432-1436, (November 1993).
	GHASSMZADEH ET AL., "Indoor Propagation and Fading Characterization of Spread Spectrum Signal at 2 GHz," IEEE, pgs. 56-60, (1992).
	JAKES, JR., "Microwave Mobile Communications," Bell Telephone Laboratories, North Andover, MA, pgs. 309-323 and 535-541, (1974).
	KAUFMANN ET AL., "Digital Spread-Spectrum Multipath-Diversity Receiver for Indoor Communications," IEEE, pgs. 1038-1041, (1992).
	KAVEHRAD ET AL., "Direct-Sequence Spread Spectrum with DPSK Modulation and Diversity for Indoor Wireless Communications," IEEE, pgs. 224-236, (1987).
	KUBOTA ET AL., "A Time Diversity CDMA Scheme Employing Orthogonal Modulation for Time Varying Channels," IEEE 43rd Vehicular Technology Conference, pp. 444-447 (May 20, 1993).
	LOPES, "Combined Space/Time Diversity Technique for Narrowband TDMA Mobile Radio Systems," IEEE Electronics Letters, Vol. 25, pp. 1001-1002 (May 1989).
	MATSUMOTO ET AL., "Performance of RS-Coded M-ary FSK for Frequency-Hopping Spread Spectrum Mobile Radios," Proceedings of the 1991 IEICE Fall Conference, B-244, The Institute of Electronics, Information, and Communication Engineers (August 5, 1991). †
	NAGUIB ET AL., "Performance of CDMA Cellular Networks With Base-Station Antenna Arrays: The Downlink", IEEE Internal Conference on Communications, Vol. 2, pgs. 795-799, (May 1994).
	PICKHOLTZ ET AL., "Field Tests Designed to Demonstrate Increased Spectral Efficiency for Personal Communications," IEEE Globcom, pgs. 878-882, (1991).
	SALMASI ET AL., "On the System Design Aspects of Code Division Multiple Access (CDMA) Applied to Digital Cellular and Personal Communications Networks," 41st IEEE Gateway to the Future Technology in Motion, Vehicular Technology Conference, pp 57-62 (May 22, 1991).
	SCHILLING ET AL., "PCN Field Test Experiments Using Broadband-CDMA," IEEE, pgs. 321-324, (December 1991).

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	SCHILLING ET AL., "Spread Spectrum for Commercial Communications," IEEE Communications Magazine, Vol. 29, Issue 4, pgs. 66-79, (April 1991).
	SESHADRI ET AL., "Two Signaling Schemes For Improving The Error Performance Of Frequency-Division-Duplex (FDD) Transmission Systems Using Transmitter Antenna Diversity," Secaucus, NJ, New York, IEEE, US, pgs 508-511, (May 18, 1993).
	SESHADRI ET AL., "Advanced Techniques For Modulation, Error Correction, Channel Equalization, And Diversity," AT&T Technical Journal, US, American Telephone and Telegraph Co., New York, Vol. 72, No. 4, pgs. 48-63, (July 1, 1993).
	SHINJI, "Mobile Communications," Maruzen Co., Ltd., Japan, pp. 172-173 (August 10, 1993).†
	TIA/EIA Interim Standard; Mobile Station-Base Station Compatibility Standard for Dual-Mode Wideband Spread Spectrum Cellular System; TIA/EIA/IS-95, (July 1993).
	WEERACKODY, "Diversity for the Direct-Sequence Spread Spectrum System Using Multiple Transmit Antennas," IEEE International Conference on Communications, Vol. 3, pp. 1775-1779 (May 1993).
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	WITTNEBEN, "Basestation modulation diversity for digital SIMULCAST," 41st IEEE Vehicular Technology Conference, pp. 848 - 853 (May 1991).
	XIANG ET AL., "TDM/CDMA VSAT Network Integrating Voice/Data Service And Its Operation Management," IEEE, pgs. 476-480, (1992).
	YAMAMOTO ET AL., "TDMA Communication," The Institute of Electronics, Information and Communication Engineers, pp. 8-9 (April 5, 1991).

<sup>1</sup> Corresponds to JP H05-211470; <sup>2</sup> Corresponds to US 5,293,645; <sup>3</sup> Corresponds to WO 199107036; <sup>4</sup> Corresponds to JP H04-502844; <sup>5</sup> Corresponds to WO 199200639; <sup>6</sup> Corresponds to H06-501349; <sup>7</sup> Corresponds to WO 94/10812; <sup>8</sup> Corresponds to JP 10-509287; <sup>9</sup> Corresponds to JP 2000-507431; <sup>10</sup> Corresponds to JP 2002-502182; <sup>11</sup> Corresponds to JP 7-502153 and WO 93/04453; <sup>12</sup> Corresponds to JP 6-510656 and WO 94/01956; <sup>13</sup> Corresponds to EP 0398 773.

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X\*\* Abstract only

† English abstract not available. A copy of the document in Japanese has been provided, in addition to the search report in which it was cited.

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